



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

UC-NRLF



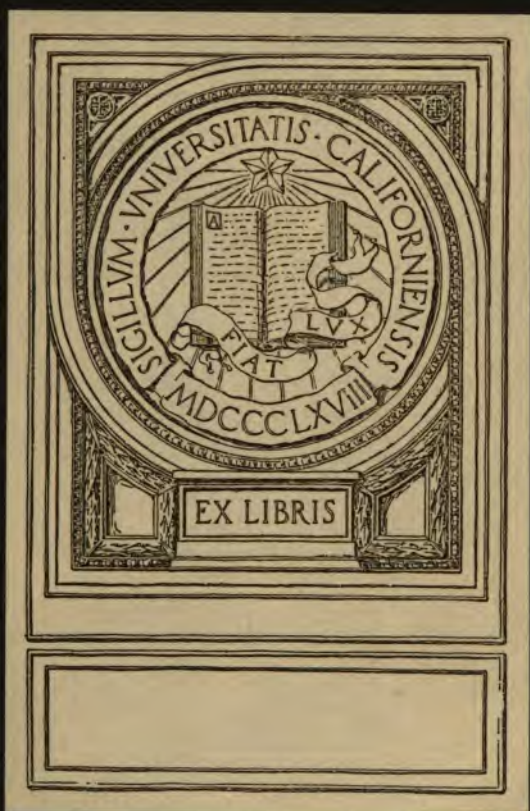
\$B 96 032

LB

1131

M6

YC 87659



# A Bibliography of Standardized Tests for the High School

WALTER S. MONROE

Assistant Director, Bureau of Educational Research,  
University of Illinois

Reprinted from the  
February, March, and April, 1920  
JOURNAL OF EDUCATIONAL RESEARCH  
(Copyright by the Public School Publishing Company, 1920)

UNIVERSITY OF  
ILLINOIS

THE PUBLIC SCHOOL PUBLISHING COMPANY  
BLOOMINGTON, ILLINOIS

LE1131  
J  
M6

TO VINU  
ADPOTLAD

## Bibliographies

### A BIBLIOGRAPHY OF STANDARDIZED TESTS FOR THE HIGH SCHOOL<sup>1</sup>

WALTER S. MONROE,

*Assistant Director, Bureau of Educational Research, University of Illinois*

In addition to standardized tests designed to measure the abilities of pupils in high-school subjects, certain tests designed for use in the elementary school have been given to high-school pupils. In assembling this bibliography an elementary school test was included if a published report of its use in high school was found. Doubtless other elementary school tests have been or could be used with profit in the high school.

A special effort was made to have the list of tests designed for use in the high school include all of which an account had been published. A few tests have been included which are in the process of construction. Although it may be that some tests escaped notice, this list is more complete than any which has been previously published. In a few instances it was difficult to determine whether the methods used in constructing a list of questions or exercises were sufficiently scientific to justify its inclusion in this bibliography. In general, doubtful tests were included. For this reason the reader is cautioned against attaching undue importance to the fact that a test appears in this list. Before a test is selected for use, careful consideration should be given to both the method of its derivation and the results of its use. When accounts of these are lacking, the advice of competent authorities should be sought.

The list of references for a test includes the account of its derivation, if it has been published, and the more important accounts of its use. The brief annotation indicates the character of the reference.

The publisher from which a test can be obtained is given when it could be ascertained. The Bureau of Educational Research of the University of Illinois carries in stock a number of tests which are published elsewhere, and for most of these the Bureau has devised class record sheets or other accessories. For this reason the Bureau of Educational Research, as well as the original publisher, is given as a source from which such tests may be obtained. A few of the tests listed are not available for distribution. In these cases the address of the author is given if it is known. All prices are omitted because the instability of the printing industry prevents announcing them permanently.

Under the head of "General References" there is given a selected bibliography which deals with the general topic of educational measurement. Some of the references

<sup>1</sup> This bibliography was prepared with the assistance of Miss Margaret Doherty, Library Assistant in the Bureau of Educational Research, University of Illinois.

pertain to tests for use in the elementary school, but they will also be found helpful by those interested in the high school field.

A section is devoted to mental tests. This particular field is developing so rapidly at this time that it is impossible to give a complete list of the tests that have been devised or that are in the process of derivation. For this reason the reader must regard this particular list as tentative and incomplete.

## GENERAL REFERENCES

Chapman, James C. and Rush, Grace P. *The scientific measurement of classroom products*. New York: Silver, Burdett and Co., 1917.

For the most part this book deals with tests for use in the elementary school. There are three general chapters which will be of interest to high school teachers.

Courtis, Stuart A. *The Gary public schools: measurement of classroom products*. New York: General Education Board, 1919.

Besides being a report of the use of a number of standardized tests in the Gary public schools, including the high school, this volume is an important contribution to the theory of educational measurements. The validity and reliability of the tests used in the survey are treated.

*The measurement of educational products*. (The Seventeenth Yearbook of the National Society for the Study of Education, Part II). Bloomington, Illinois: Public School Publishing Company, 1918.

This volume of the Yearbook is a compilation by members of the National Association of Directors of Educational Research. A complete bibliography is given.

Monroe, Walter S. "Improvement of instruction through the use of educational tests," *Journal of Educational Research*, 1:96-102, February, 1920.

This article presents a procedure for interpreting class scores and distributions with special reference to the Courtis Standard Research Tests, Series B.

Monroe, Walter S. and De Voss, J. C. and Kelly, F. J. *Educational tests and measurements*. Boston: Houghton Mifflin Co., 1917.

This is a general treatise upon educational tests and their use. Chapter VII is devoted to high-school tests.

Proctor, W. M. "Psychological tests employed in the vocational guidance of high school pupils." (To appear in the first volume of the *Journal of Educational Research*.)

Starch, Daniel. *Educational measurements*. New York: Macmillan, 1916.

This book contains two chapters upon school marks. Most of the tests which were in existence at the time the book was written are reproduced. A number of them are designed for high school subjects.

Terman, Lewis M. *The intelligence of school children*. Boston: Houghton Mifflin Co., 1919.

This book emphasizes the need for the use of intelligence tests in the classification and guidance of pupils.

Terman, Lewis M. *Measurement of intelligence: an explanation of and a complete guide for the use of the Stanford revision and extension of the Binet-Simon intelligence scale*. Boston: Houghton Mifflin Co., 1916.

## I. COMMERCIAL SUBJECTS

## National Business Ability Tests

1. Test on tabulation (mental alertness)
2. Reproducing instructions
3. Test on invoicing
4. Tests on fundamental arithmetic:
  - a) Fractions
  - b) Percentage
5. Test in business arithmetic
6. Tests in English
  - a) Spelling, elementary and advanced
  - b) Grammar and punctuation, elementary and advanced
7. Elementary test in letter writing
8. Test on answering letters (advanced)
9. Stenographic tests (transcription and typewriter copying)
10. Test on copying for the mimeograph
11. Test on addressing envelopes with a pen and on filing
12. Ayres' Handwriting Scale used to judge handwriting

The nature of the above tests is indicated in a general way by the titles. For a detailed description consult Chapter v of the reference.

For each of the tests there are "two series" or two forms. It is intended that the first series be used when the test is given for the first time and the second series is to be used when it is desired to repeat the test. The two series are intended to be equivalent in difficulty.

*Publisher:* National Associated Schools of Scientific Business, Inc., Chicago.

*Reference:* Cody, Sherwin. *Commercial tests and how to use them*. Yonkers-on-Hudson, New York: World Book Company, 1919.

Part One contains the following chapters: Schools and business employment, National Business Ability Tests, principle of scientific tests, national tests in the classroom.

Part Two consists of the following chapters: Two series of National Business Ability Tests (tests are reproduced, with directions for giving and scoring), measuring classes and teachers. Appendix is devoted to the report of use of the tests in classroom.

**Rogers' Stenographic Tests.** This is the combination of tests which Mr. Rogers found to be useful for identifying those persons who possessed the qualities necessary for a successful stenographer:

1. For dictation
  - a) Hard Directions
  - b) Opposites
  - c) Form Substitution
2. For grammar
  - a) Hard Directions
  - b) Opposites
  - c) Mixed Relations
3. For typewriting
  - a) Verb Object
  - b) Color Making



TA1  
ES9  
v.55

*Reference:* Jaques, M. P. "Mental tests for typists and stenographers," *Industrial Management*, 58:145-46, August, 1919.

A discussion of an experiment with the Rogers' Stenographic Tests in the Brooklyn branch of the Charles Williams Company.

## II. DOMESTIC SCIENCE

L12.5  
S5  
v.12

### **Bowman and Trilling's Informational and Reasoning Tests in Textiles and Clothing.**

"These tests have been constructed by Leona F. Bowman and Mabel Trilling of the University of Chicago and will be described in a forthcoming number of *Supplementary Educational Monographs* published by the School of Education, University of Chicago."

### **Murdock's Scale for Measuring Certain Elements in Hand Sewing.**

*Publisher:* Bureau of Publications, Teachers College, Columbia University, New York City.

TT7.5  
175

*Reference:* Murdock, Katharine. *The measurement of certain elements of hand sewing.* (Teachers College Contributions to Education, No. 103.) New York: Teachers College, Columbia University, 1919. 120 pp.

**Williams and Knapp's Scale for Measuring Skill in Machine Sewing.** The method of deriving this scale is similar to that used in Thorndike's Handwriting Scale.

## III. DRAWING

**Manuel's Suggested Series of Tests for Studying Talent in Drawing.** On the basis of experimental testing of nineteen persons who had marked ability in drawing, six of whom were high-school students, Dr. Manuel suggests the following set of diagnostic tests:

1. Tests of the elementary ability to represent by lines and areas, figures and objects directly observed. Drawing a horse (memory) and a toy wagon (object).
2. Tests of general intelligence (Stanford-Binet revision) with special reference to:
  - a) Memory for Digits
  - b) Designs
  - c) Sixty Words
  - d) Clock Test
  - e) Vocabulary
  - f) Fables
  - g) Code
  - h) Inclosed
  - i) Paper Cutting
  - j) Logical Memory
3. Tests of ability to discriminate differences in visual magnitudes (Manuel's Test in Discrimination of Visual Proportions, Manuel's Series).
4. Tests of visual acuity and normality of color vision.
5. Tests of ability to observe visually:
  - a) Whipple Cancellation Tests—4 forms
  - b) Rossolimo Observation Test
  - c) Whipple Description of a Stamp
  - d) McDougall Spot Pattern

6. Tests of memory for visual forms especially deferred memory:
  - a) Rossolimo Recognition of Lineal Figures
  - b) Rossolimo Recognition of Colored Figures
  - c) Rossolimo Recognition of Pictures
7. Tests of ability to manipulate spatial forms.
  - a) Thurstone's Hand Test
  - b) Thurstone's Spatial Relations Test
  - c) Punched Holes
  - d) Rugg's Painted Cube Test
8. Tests of esthetic judgment:
  - a) Thorndike's Tests of Esthetic Appreciation
  - b) University of Illinois—Esthetic Judgment Test.

*Reference:* Manuel, H. T. *Talent in drawing: an experimental study of the use of tests to discover special ability.* (School and Home Education Monographs No. 3.) Bloomington, Illinois: Public School Publishing Company, 1919.

This monograph is devoted to a description of the tests and an analysis of the results obtained.

**Rugg's Scale for Measuring Freehand Lettering for Use in Secondary Schools and Colleges.** It consists of a series of eight samples of freehand lettering, arranged in the order of increasing merit. It may be used in measuring the efficiency of a student's work in freehand lettering.

*Reference:* Rugg, H. O. "A scale for measuring freehand lettering," *Journal of Educational Psychology*, 6:25-42, January, 1915.

Derivation, function, and experience with the scale is discussed.

#### IV. ENGLISH

##### A. Composition

**Harvard-Newton Scale.** The Harvard-Newton Composition Scale consists of four separate scales, one for each form of discourse: argumentation, description, exposition, and narration. Each of the scales consist of six compositions written by eighth-grade pupils and arranged in order of merit as determined by the marks assigned by teachers, rating them as eighth-grade compositions. This scale has been used in the first-year classes in the high school.

*Publisher:* Harvard University Press, Cambridge, Massachusetts.

*References:* Ballou, F. W. *Scales for the measurement of English composition.* (Harvard Newton Bulletin No. 2) Cambridge, Massachusetts: Harvard University Press, 1914.

The derivation and use of the scale are described.

Stoddard, W. E. "Comparison of the Hillegas and Harvard-Newton scales in English composition," *Pedagogical Seminary*, 23:498-501, December 1916.

*Second annual conference on educational measurements*, April, 1915, p. 115 ff. (Indiana University Bulletin, v. 13, no. 11, October, 1915.)

An account of the use of this scale in the first year of the high school is given.

150  
J8  
v. 6

1576  
B2

**Hillegas' Scale for the Measurement of the Quality in English Composition for Young People.** This scale consists of ten compositions ranging from an artificial production, whose scale value is zero, to the tenth composition, whose scale value is 9.3. Three of the ten compositions are artificial productions, five were written by high school pupils, and the remaining two by college freshmen. No two were written on the same topic and they vary greatly in length and type. Each degree of merit is represented by only one composition.

*Publisher:* Bureau of Publications, Teachers College, Columbia University, New York City.

*References:* Curtis, S. A. *The Gary public schools: measurement of classroom products.* New York: General Education Board, 1919, p. 227.

An account of the use of this scale in the high school is given here and also in the following reference.

L-295  
G2G3  
v.8

LA390  
J3A2  
Parker d. -

*An educational survey of Janesville, Wisconsin.* Madison, Wisconsin: State Department of Public Instruction, 1918, p. 287.

Gunther, Charles. "My experience with the Hillegas scale," *English Journal*, 2:535-42, November 1919.

Describes a series of experiments carried on by four teachers in the use of the Hillegas scale. Mr. Gunther in his conclusion definitely states that through the Hillegas or some similar scale greater uniformity is gained than through a percent scale.

Reviews  
" 5  
" 1  
" 2

Hillegas, Milo B. "Hillegas scale for measurement of English composition," *Teachers College Record*, 13:331-84, September, 1912.

Johnson, F. W. "The Hillegas-Thorndike scale for measuring the quality in English composition by young people" *School Review*, 21:39-49, January, 1913.

Kayetz, Isidor. "A critical study of the Hillegas composition scale," *Pedagogical Seminary*, 21:559-77, December, 1914.

The first part of the article is concerned with the scale itself; the second part devoted to a criticism by the author and others. References relative to the scale follow.

Parker d

Parker, F. E. "Value of measurements," *English Journal*, 8:203-17, April, 1919.

A criticism on the use of the Hillegas scale by a subcommittee of the Detroit English Club. S. A. Curtis discusses the "Use of the Hillegas Scale" in the second part of this article.

L124  
O222

*School report of the town of Southington, Connecticut*, 1917, p. 12.

Stoddard, W. E. "Comparison of the Hillegas and Harvard Newton scales in English composition," *Pedagogical Seminary* 23:498-501, December, 1916.

Most valuable for its criticism of the Hillegas scale.

Thorndike, E. L. "Notes on the significance and use of the Hillegas Scale for measuring the quality of English composition," *English Journal*, 2:551-561, November, 1913.

**Minnesota English Composition Scales.**

*Reference:* Van Wagenen, M. J. "The accuracy with which English themes may be graded with the use of English composition scales," *School and Society*, 11:441-450, April 10, 1920.

Minnesota composition scales were used in this study.

**Nassau County Supplement to the Hillegas Scale.** This scale is a simplification and improvement of the original Hillegas Composition Scale. It consists of a series of compositions written under controlled conditions and arranged in order of general merit.

*Publisher:* Bureau of Publications, Teachers College, Columbia University, New York City. Also obtainable from Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*References:* Theisen, W. W. "Improving teachers' estimates of composition specimens with the aid of the Trabue Nassau County scale," *School and Society*, 7:143-150, February 2, 1918.

Discusses the outcomes of an experiment prompted by the question: "Can teachers improve their judgment of the merit of compositions through use of the scale?"

Trabue, M. R. "Supplementing the Hillegas composition scale," *Teachers College Record*, 18:51-84, January, 1917.

Reasons for constructing the Nassau County supplement, its advantages over the Hillegas scale. Table V lists the "estimates of quality to be expected from high school seniors and sophomores" in the use of the Hillegas scale.

An account of the use of scale in the high school may be found in the following: *Report of a Survey of Public Education in Nassau County, New York*. Albany, New York: University of the State of New York, 1918, p. 149 ff.

*Report of a survey of the school system of St. Paul, Minnesota*, 1917, p. 456.

Scores are given for St. Paul, Minnesota; Mobile and Mobile County, Alabama; Nassau County, and South River, New York; Lead, South Dakota.

**Topeka Scale for Judging Compositions.** This scale was devised by the English department of the high school in Topeka, Kansas.

*Address:* Carmie S. Wolfe, High School, Topeka, Kansas.

*Reference:* "The Topeka scale for judging compositions," *Bulletin of the Illinois Association of Teachers of English*, v. 9 no. 6. March, 1, 1917.

Scale reproduced and derivation described. For a copy of the bulletin address Professor H. G. Paul, University of Illinois, Urbana, Illinois.

**Willig's Scale for Measuring Written Composition.** This scale consists of eight compositions arranged in order of both "form" and "story value." All of the compositions were written by school children under controlled conditions. This scale may be used in grades IV to XII inclusive.

*Publisher:* Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*Handwritten:*  
*2000*  
**Reference:** Willing, M. H. "Measurement of written composition in grades iv to viii," *English Journal*, 7:193-202, March, 1918.

Considers the derivation of the test, also its giving and scoring. Although this scale was designed for use in the upper grades of the elementary school, it can be used profitably in the high-school.

#### B. COPYING

**Boston Test in Accurate Copying.** Test was prepared by the committee on standards in English. It was given to first-year pupils.

**Reference:** *English: determining a standard in accurate copying.* (Bulletin No. 6 of the Department of Educational Investigation and Measurement, Boston Public Schools, 1916).

This bulletin consists of a report on the Test in Accurate Copying given to 4,494 first-year high school pupils in November, 1914. Test is reproduced.

**Kansas City, Missouri, public schools, bulletin no. 1 of the Bureau of Research and Efficiency,** February, 1916, p. 55.

Analysis of errors made in Kansas City, Missouri, by ages and grades. The test also with directions for giving and scoring are given.

#### C. GRAMMAR AND PUNCTUATION

**Clemens' Grammar Test.** A test consisting of thirteen sentences in which the pupil is asked to make a choice between the correct and incorrect words. This test is based on E. C. Woolley's *Handbook of Composition*.

**Address:** A. H. Clemens, Principal of High School, Rochester, Minnesota.

**Reference:** *Report of the board of education of Rochester, Minnesota, 1912-1918*, p. 40.

The test is reproduced, with a key to the sections in Woolley's *Handbook*. Tentative standard scores are also given.

**Starch's Grammatical Scales.** Starch has devised three scales (A, B, and C) to measure a pupil's ability to use correctly certain language forms.

**Starch's Tests for Measuring Grammatical Knowledge.** The three tests in this series consist of selections in which the pupil is asked to indicate certain parts of speech or certain inflected forms.

**Publisher:** University Cooperative Company, Madison, Wisconsin.

**References:** Starch, D. *Educational measurements*, New York: Macmillan, 1916.

See Chapter VII entitled "The measurement of ability in English grammar," for a reproduction of the tests and standards.

Starch, Daniel. "The measurement of achievement in English grammar," *Journal of Educational Psychology*, 6:615-26, December, 1915.

**Clemens' Punctuation Test.** A list of twenty-eight sentences which are to be punctuated. Based on E. C. Woolley's *Handbook of Composition*.

**Address:** A. H. Clemens, Principal of High School, Rochester, Minnesota.

**Reference:** *Report of the board of education of Rochester, Minnesota, 1912-1918*, p. 42.

The test with a key to the sections in the *Handbook* is reproduced.

- Starch's Punctuation Scale.** This scale consists of a series of groups of sentences which are to be punctuated. The groups are arranged in order of difficulty. It will be useful in the high school.

*Publisher:* University Cooperative Company, Madison, Wisconsin. Also obtainable from the Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*References:* Starch, Daniel. *Educational measurements*. New York: Macmillan Company, 1916.

See Chapter VII entitled "The measurement of ability in English grammar," for a reproduction of test, and standards.

*Starch, Daniel.* "The measurement of achievement in English grammar," *Journal of Educational Psychology*, 6:615-26, December, 1915.

#### D. LANGUAGE

**Trabue's Completion-Test Language Scales.** These scales are composed of "completion sentences" which are arranged in order of difficulty from the very simple to the very difficult. There are two scales for the high school, L and M.

*Publisher:* Bureau of Publications, Teachers College, Columbia University, New York City. Also obtainable from Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*References:* Trabue, M. R. *Completion-test language scales*. (Teachers' College, Columbia University Contributions to Education, No. 77) New York: Teachers College, Columbia University, 1916.

The author states: "This monograph is the report of an attempt to derive one or more scales for the measurement of ability along certain lines closely related to language."

Account of its use in the high school may be found in:—

*Report of a survey of public education in Nassau County, New York.* Albany, New York: University of the State of New York, 1918, p. 177 ff.

*Report of a survey of the school system of St. Paul, Minnesota*, 1917, p. 433 ff., table inserted before p. 453, 460, 487.

#### E. SPELLING

**Ayres' Spelling Scale.** A thousand words constituting a fundamental English vocabulary have been grouped in this scale according to their spelling difficulty as indicated by the percent of correct spellings. The words were selected from four important reports on the frequency with which words are used in letters, newspaper articles, the English Bible, and various authors. The approximate percent of correct spellings to be expected in each grade is shown for each word. Although not intended for use in the high school this scale has been used by some above the eighth grade.

*Publisher:* Division of Education, Russell Sage Foundation, New York City. Also obtainable from the Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*References:* Ayres, L. P. *A measuring scale for ability in spelling*. New York: Division of Education, Russell Sage Foundation, 1915.

Courtis, S. A. *The Gary public schools: measurement of classroom products*. New York: General Education Board, 1919.

Scofield, F. A. "Difficulty of Ayres' spelling scale as shown by the spelling of 560 high school students," *School and Society*, 4:339-40, August 26, 1916.

Account of its use in the junior high school and senior high school, Eugene, Oregon.

Scofield, F. A. "An experiment in spelling in the Eugene high school," *School and Society*, 5:299-300, March 10, 1917.

**Buckingham's Extension of the Ayres' Spelling Scale.** This extension adds 509 words to the original Ayres' Spelling Scale making a scale of 1,509 words. The additions are mainly at the more difficult end of the scale and will thus add to its value especially for grammar grades and the high school. Scale is for use in grades II to IX.

*Publisher:* Bureau of Educational Research, University of Illinois, Urbana, Illinois.

**Buckingham's Spelling Scale.** This was the first published spelling scale. It consisted of fifty words very carefully evaluated together with about one hundred and twenty-five supplementary words. The scale as such has not been published separately. Some of the words now appear in the Buckingham's Extension of the Ayres' Spelling Scale mentioned above.

*Publisher:* Not obtainable.

*Reference:* Buckingham, B. R. *Spelling ability: its measurement and distribution*. (Teachers' College, Columbia University Contributions to Education, No. 59). New York: Teachers College, Columbia University, 1913.

Considers the derivation of scale. Scale is reproduced.

*An educational survey of Janesville, Wisconsin.* Madison, Wisconsin: State Department of Public Instruction, 1918, p. 272.

Account of the Buckingham sixty-five word list in the high school.

**Courtis' Dictation Spelling Tests.** There are four tests in this series, each of which contains twenty test words embedded in sentences.

*Publisher:* S. A. Courtis, 82 Eliot Street, Detroit, Michigan.

*Reference:* Courtis, S. A. *The Gary public schools: measurement of classroom products*. New York: General Education Board, 1919, pp. 87-92.

**Jones' One Hundred Spelling Demons.** This is a list of the one hundred words most frequently misspelled by children in the elementary school.

*Address:* W. F. Jones, University of South Dakota, Vermillion, South Dakota.

*Reference:* Jones, W. F. *Concrete investigation of the material of English spelling*. Vermillion, South Dakota: University of South Dakota, 1914.

This is an account of the investigation in which list was secured.

**Monroe, Walter S., De Voss, J. C., and Kelly, F. J.** *Educational tests and measurements*. Boston: Houghton Mifflin Company, 1917, p. 133.

The One Hundred Spelling Demons are reproduced.

Account of the use of the "Demons" in high school may be found in the following:

*Annual report of the Des Moines public schools*, 1915, part 2, p. 10 ff.

*Annual report of the public schools of Johnstown, Pennsylvania*, 1918, p. 111-113.

Courtis, S. A. *The Gary public schools: measurement of classroom products*. New York: General Education Board, 1919, p. 92 ff., 414 ff.

Jones' Spelling Demons used in analyzing misspelled words in the composition of eighth-grade children.

- *School report of the town of Southington, Connecticut*, 1919, p. 21.

*Annual report of the school department of the city of Pittsfield, Massachusetts*, 1916, p. 23-24.

**Monroe's Timed Sentence Spelling Test.** This is a series of three tests each of which consists of fifty words taken from suitable columns of the Ayres' Spelling Scale and embedded in sentences. The sentences are then so arranged that they may be dictated at approximately the normal rate of writing in each of the grades. Test III is used in grades VII and VIII and in the high school.

*Publishers:* Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*Reference:* Monroe, Walter S., De Voss, J. C., and Kelly, F. J. *Educational tests and measurements*. Boston: Houghton Mifflin Co., 1917, p. 119.

#### V. FOREIGN LANGUAGES

- ✓ **Handschin's Foreign Language Tests.** Series of four short tests for the purpose of discovering types of learners in language study.

*Publisher:* World Book Company, Yonkers, New York.

*References:* Handschin, C. H. "A test for discovering types of learners in language study," *Modern Language Journal*, 3:1-4, October, 1918.

Tests reproduced and directions given.

Handschin, C. H. "Tests and measurements in modern language work," *Modern Language Journal*, 4:217-25, February, 1920.

#### A. French

**Henmon's French Tests.** A series of tests in French similar to the author's Latin tests.

*Publisher:* V. A. C. Henmon, University of Wisconsin, Madison, Wisconsin.

*Reference:* Henmon, V. A. C. "The measurement of ability in French," *Journal of Educational Research*. (To appear in the first volume.)

**Starch's French Reading Test.** This test is composed of a series of thirty sentences arranged roughly in the order of increasing difficulty. The sentences were from the readings usually covered in the first year of the high school.

**Starch's French Vocabulary Test.** The test is composed of two numbered lists of one hundred French words each and corresponding lists of their English equivalents.



lents. The pupil is asked to write after each French word a number of its English equivalents.

*Publisher:* University Cooperative Company, Madison, Wisconsin.

*Reference:* Starch, Daniel. *Educational measurements*. New York: Macmillan, 1916.

In Chapter XIII "The Measurement of Ability in French" the French vocabulary and sentence tests are reproduced. Derivation is described.

**Wilkins' Predetermination Test in French.** After analyzing language ability Mr. Wilkins derives a test for French which consists of five parts:

- (1) seeing and writing
- (2) hearing and writing
- (3) seeing and speaking
- (4) hearing and speaking
- (5) grammatical concepts.

*Reference:* Wilkins, L. A. "Testing for ability to learn a foreign language," *Bulletin of High Points in the Work of the High Schools of New York City*, v. 1, no. 2, p. 5, February, 1919; no. 8, p. 26, October, 1919.

A discussion of the test and scoring is followed by the reproduction of the test. Results are given in the October Number.

#### B. German

**Starch's German Reading Test.** This test, like the one for French, is composed of a series of sentences arranged roughly in the order of increasing difficulty. The sentences were selected from first-year texts and from the authors usually covered in four years of German.

**Starch's German Vocabulary Tests.** Professor Starch states: "The test is composed of two sets of 100 words each. These words are selected by taking the first word on every 23rd page of the large Muret-Sanders German-English Dictionary."

*Publisher:* University Cooperative Co., Madison, Wisconsin.

*Reference:* Starch, Daniel. *Educational measurements*. New York: Macmillan, 1916.

In Chapter XII: "The measurement of ability in German" tests are reproduced.

#### C. Latin

**Brown's Latin Tests.**

1. *Connected Latin Test.* This test consists of a connected passage of Latin. The pupils are given a specified amount of time in which to interpret and write in English as much of the passage as possible.
2. *Latin Sentence Test A.* This consists of a series of Latin sentences ranging from very easy to very difficult.
3. *Latin Sentence Test B.* The same as Test A but different sentences.
4. *Latin Vocabulary Test.* A list of words occurring in each of seven beginners' books.

5. *Formal Latin Grammar Test*. This test is made up of twenty constructions in Latin sentences. The constructions are in italics and the pupils are required to name and describe them but not to translate the sentences.

*Publisher*: Parker Educational Company, Madison, Wisconsin.

*Reference*: Brown, H. A. *A study of ability in Latin*. Oshkosh, Wisconsin: H. A. Brown, 1920.

- ✓ **Hanus' Latin Tests**. These consist of four tests for vocabulary, a translation test and a grammar test. All of these tests are based on Caesar and Cicero. No words appear in the vocabulary tests "which occur less than one hundred times in Caesar and Cicero." The translation test "contains only constructions which are found at least 500 times in Caesar and Cicero."

*Address*: Paul Hanus, Harvard University, Cambridge, Massachusetts.

*Reference*: Hanus, P. H. "Measuring progress in learning Latin," *School Review*, 24:342-345, May, 1916.

Four Latin vocabulary tests are reproduced with suggested credit, directions for grading and making correlations.

#### Henmon's Latin Tests.

1. *Latin Vocabulary Tests* selected from 239 words common to thirteen beginners' books and to Caesar and Vergil.

(1) Tests A, B, C, and D are of equal difficulty and each consists of fifty words arranged in order of increasing difficulty.

(2) Text X is a selection of 25 words having approximately the same scale values, which may, therefore, be disregarded in scoring and each word given the same weight.

2. *Latin Sentence Tests*. Graded sentences containing no word not included in the 239 standard words.

(1) Tests I and II are of equal difficulty and each consists of ten sentences arranged in order of increasing difficulty.

(2) Test III is a selection of ten sentences of approximately the same difficulty.

*Publisher*: V. A. C. Henmon, University of Wisconsin, Madison, Wisconsin. Also obtainable from the Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*Reference*: Henmon, V. A. C. "Measurement of ability in Latin," *Journal of Educational Psychology*, 8:515-38, 589-99, November-December, 1917.

This article gives the derivation of the tests.

**Lohr's Latin Test**. This is a "form test" to be given at the end of the first year. Pupils are asked to identify the forms of certain nouns, pronouns, and verbs.

*Address*: School of Education, University of North Carolina, Chapel Hill, North Carolina.

*Reference*: Lohr, L. L. "A Latin form test for use in high school classes," *High School Journal*, 1:7-9, 14-17, November-December, 1918.

Gives critical account of the appropriateness of Starch's Latin tests and the derivation of a form test.

**Starch's Latin Vocabulary Tests.****Starch's Latin Reading Test.**

See Starch's French Tests for a description of these two tests.

*Publisher:* These scales have been withdrawn from distribution.

*Reference:* Starch, Daniel. *Educational measurements*. New York: Macmillan, 1916.

See Chapter XI: "Measurement of ability in Latin," for reproduction of tests, and their derivation.

**Starch-Watters' Latin Tests.** This is a second series of Latin tests prepared by Professor Starch, in collaboration with Mr. Watters. It consists of (1) Latin vocabulary test based on Lodge's Vocabulary of High School Latin; (2) translation tests for each of the four years of the high school course,

*Address:* University Cooperative Co., Madison, Wisconsin.

*Reference:* Starch, Daniel. "A test in Latin," *Journal of Educational Psychology*, 10: 489-500, December, 1919.

**Wentworth Latin Tests.** Test 1 consists of one hundred English words, some of which come from the Latin. The pupil is to mark each word showing whether it comes from the Latin or not. Test 2 consists of one hundred English words which are derived from the Latin. The pupil is to give the Latin root.

*Address:* Mary M. Wentworth, Hollywood High School, Los Angeles, California.

*Reference:* Wentworth, M. M. "An experiment with two Latin tests," *School Document No. 26, Los Angeles City School District, Division of Educational Research*, October, 1919.

**D. Spanish**

**Wilkins' Predetermination Test in Spanish.** Mr. Wilkins states that language ability is predicted largely upon (1) susceptibility to impression; (2) readiness and accuracy of expression; (3) grasps of ordinary grammatical concepts. There are four ways for testing impression and expression:

1. Visual—motor (seeing and writing)
2. Aural—motor (hearing and writing)
3. Visual—oral (seeing and speaking)
4. Aural—oral (hearing and speaking)

Then there is a test of grammatical concepts.

*Reference:* Wilkins, L. A. "Testing for ability to learn a foreign language." *Bulletin of High Points in the Work of the High Schools of New York City*, v. 1, no. 2, p. 5, February, 1919; October, 1919, no. 8, p. 26.

A discussion of the test and scoring is followed by the reproduction of the test. Results are given in the October Number.

**VI. HANDWRITING**

**Ayres' Scale for Measuring the Quality of Handwriting of Adults.** This scale is similar to the well-known Ayres' Scale, "three slant edition" except samples of the handwriting of adults were used in its construction.

*Publisher:* Russell Sage Foundation, Division of Education, New York City.

*References:* Ayres, L. P. *A scale for measuring the quality of handwriting of adults.* (Division of Education, Russell Sage Foundation, Bulletin E 138.)

*Penmanship: determining the achievement of elementary school graduates in handwriting* (Bulletin No. IX of the Department of Educational Investigation and Measurement, Boston Public Schools, 1916.)

"On November 23, 1914, a test in accurate copying was given to 4,494 pupils in the first-year classes of fourteen high schools in Boston. In the test nothing was said to the pupils about their penmanship, hence they did not know that the quality of their handwriting was to be considered." The Ayres' Scale for Measuring Handwriting of Adults was used in rating these samples. Results are given.

Johnston, J. H. "A comparison of the Ayres and Thorndike handwriting scales (containing a table of equivalent values in the two scales)," *North Carolina High School Bulletin*, 7:170-73, October, 1916.

**Ayres' Handwriting Scale, "Gettysburg Edition."** This is the latest edition of Ayres handwriting scales. Numerous changes have been introduced which make it a more accurate instrument than the "three slant edition." It uses the first three sentences of the "Gettysburg Oration" as copy material.

*Publisher:* Russell Sage Foundation, Division of Education, New York City.  
Also obtainable from the Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*References:* Breed, F. S. "The comparative accuracy of the Ayres Handwriting Scale, Gettysburg Edition," *Elementary School Journal*, 18:459-63, February, 1918.

The "Gettysburg Edition" is shown to yield more accurate measures than the "three slant edition."

Lewis, E. E. "The present standard of handwriting in Iowa Normal Training High Schools," *Educational Administration and Supervision*, 1:663-71, December, 1915.

"This report describes an investigation of the quality and speed of the handwriting of 1,760 third and fourth-year students in 166 Iowa Normal Training High Schools."

**Ayres' Measuring Scale for Handwriting, "Three Slant Edition."** This is the first of the handwriting scales devised by L. P. Ayres.

*Publisher:* Russell Sage Foundation, Division of Education, New York City.

*References:* Ayres, L. P. *A scale for measuring the quality of the handwriting of school children.* (Division of Education, Russell Sage Foundation, Bulletin No. 113).

This is an account of the derivation of the scale.

Courtis, S. A. *The Gary public schools: measurement of classroom products.* New York: General Education Board, 1919, p. 68.

**Cleveland Free Choice Test.** This refers only to the method of securing samples of the handwriting of pupils.

*Reference:* Courtis, S. A. *The Gary public schools: measurement of classroom products.* New York: General Education Board, 1919, p. 49.

LA 285  
62-3  
v. 8

## VII. HISTORY

## A. General

**Rugg's Tests for Historical Judgment.**

*Address:* E. U. Rugg, Oak Park High School, Oak Park, Illinois.

*Reference:* Rugg, E. U. "Character and value of standardized tests in history," *School Review*, 27: 757-71, December, 1919.

The author discusses the existing tests in the field, general features and general criticisms of existing tests, value of the testing movement in history. He inserts a table which gives the following information: name and title, where reported, type, kind of questions and general comment.

## B. Ancient History

**Barnard's Test in Roman History.** A test covering one period of ancient history.

*Address:* A. F. Barnard, University High School, University of Chicago, Chicago, Illinois.

**Sackett's Scale in Ancient History.** This scale is composed of six tests based on carefully selected information in ancient history.

*Publisher:* L. W. Sackett, University of Texas, Austin, Texas. Also obtainable from Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*Reference:* Sackett, L. W. "A scale in ancient history," *Journal of Educational Psychology*, 8:284-93, May, 1917.

This article gives the derivation of the scale.

## C. United States History

**Barr's Diagnostic Tests in United States History.** A test to diagnose historical abilities.

*Address:* A. S. Barr, 19 S. La Salle Street, Chicago, Illinois.

**Harlan's Test of Information in American History.** This is an information test in American history. It consists of ten exercises based on an analytical study of textbooks in American history. This test gives the teacher a measure of the efficiency with which the information side of American history has been taught. It may be used in first year of high school.

*Publisher:* Bureau of Educational Research, University of Illinois, Urbana, Illinois.

**Sackett's Scale in United States History.** This scale is composed of seven different tests based on carefully selected information in United States history. This scale can be used with pupils who have studied history above the sixth grade. It is difficult enough to test most high-school and college students. It is based upon the work of Bell and McCollum.

*Publisher:* L. W. Sackett, University of Texas, Austin, Texas. Also obtainable from Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*References:* Bell, J. C. and McCollum, D. F. "A study of the attainments of pupils in United States history," *Journal of Educational Psychology*, 8:257-74, May, 1917.

Sackett, L. W. "A scale in United States history," *Journal of Educational Psychology*, 10:345-49, September, 1919.

**Starch's American History Test, Series A.** This test consists of 69 mutilated sentences in which the pupil is asked to write the missing words or phrases.

*Publisher:* University Cooperative Co., Madison, Wisconsin.

### VIII. MATHEMATICS

#### A. General

**Rogers' Mathematics Tests.** These are a series of tests designed to measure several types of ability in the field of mathematics. The series include tests on arithmetic and algebra as well as geometry.

*Publisher:* Bureau of Publications, Teachers College, Columbia University, New York City.

*Reference:* Rogers, A. L. *Experimental tests of mathematical ability and their prognostic value.* (Teachers College Contributions to Education, No. 89.) New York: Teachers College, Columbia University, 1918.

Miss Rogers discusses in her thesis (1) summary of previous work; (2) general conditions of the present investigation, application of the tests and system of scoring; (3) analysis of mathematical ability; (4) prognosis of mathematical ability.

#### B. Arithmetic

**Buckingham's Scale for Problems in Arithmetic.** This scale consists of three divisions called: Division 1, Division 2, and Division 3, which are designed for different grades. Each division consists of ten problems evaluated in terms of difficulty. Difficulty is understood to mean the difficulty of getting the correct answer. Problems in Division 3 are in most cases sufficiently difficult for use in the high school.

*Publisher:* Bureau of Educational Research, University of Illinois, Urbana, Illinois.

**Cleveland Survey Arithmetic Tests.** They were designed for use in the survey of the Cleveland public schools. The series consists of fifteen tests, including four in addition, two in subtraction, three in multiplication, four in division, and two in addition and subtraction of common fractions.

*Publisher:* Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*References:* Counts, G. S. *Arithmetic tests and studies in the psychology of arithmetic.* (Supplementary Educational Monographs, v. 1, no. 4) Chicago: University of Chicago Press, 1917.

Courtis, S. A. *The Gary public schools: measurement of classroom products.* New York: General Education Board, 1919, p. 147.

**Courtis Standard Research Tests, Series B.** These are the well-known Courtis arithmetic tests. The series consists of four tests, one on each of the operations with integers.

*Publisher:* S. A. Courtis, 82 Eliot St., Detroit, Michigan. Also obtainable from Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*References:* *School report of the town of Southington, Connecticut*, 1919, p. 24.

An account of the use of the Courtis Arithmetic Tests, Series B, in first-year high-school commercial classes.

LAC 25  
SUG  
V. 1

Courtis, S. A. *The Gary public schools: measurement of classroom products*. New York: General Education Board, 1919, p. 147 ff.

In addition to reporting on the use of these tests in the high school, the author gives an account of how his tests were constructed and a discussion of their validity and reliability.

### C. Algebra

**Coleman's Scale for Testing Ability in Algebra.** This test consists of a series of exercises arranged in order of difficulty.

*Publisher:* W. H. Coleman, Bertrand, Nebraska.

**Hots's First-Year Algebra Scale.** These scales consist of five lists of algebra exercises: (1) addition and subtraction; (2) multiplication and division; (3) equation and formula; (4) problems; and (5) graphs. In each list the exercises are arranged in order of difficulty. These scales are designed to determine the ability of pupils in terms of the exercises which just 50 percent of the class are able to solve correctly. They are instruments for measuring the abilities of classes rather than of individuals. No measure of rate of work is secured.

*Publisher:* Bureau of Publications, Teachers College, Columbia University, New York City. Also obtainable from Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*References:* Hotz, H. G. *First-year algebra scales*. (Teachers College Contributions to Education, No. 90.) New York: Teachers College, Columbia University, 1918.

Dr. Hotz in his thesis discusses the origin and use of the First-Year Algebra Scales.

Cawl, F. R. "Practical uses of an algebra standard scale," *School and Society*, 10:88-90, July 19, 1919.

An account of the ways in which the Hotz First-year Algebra Scales are of value to the superintendent and teacher.

**Indiana Algebra Tests.** A series of twelve tests which incorporated Monroe's Standard Research Tests in Algebra and six tests devised by H. G. Childs of Indiana University. Not available for use.

*Reference:* Childs, H. G. "The measurement of achievement in algebra," *Third Conference on Educational Measurements*. (Bulletin of the Extension Division, Indiana University, v. 2, no. 6) 1917, p. 171-83.

Sample exercises from tests are reproduced and results tabulated. Monroe's and Rugg's tests are compared.

**Los Angeles Test in 9A Algebra.** This test was devised by a committee of Los Angeles high-school teachers. It is based on the work of Rugg and Clark.

*Reference:* *Second year book of the Division of Educational Research, Los Angeles, California*, July, 1919, p. 113.

The test is reproduced with answers, results and graphs.

**Monroe's Standard Research Tests in Algebra.** These tests are based upon the simple equation and the steps involved in its solution. There are five tests, one upon each of the processes involved and a sixth test requiring a complete solution of a simple equation.

*Publisher:* Bureau of Educational Measurements and Standards, Kansas State Normal School, Emporia, Kansas.

- Period  
 211  
 25  
 " 211  
 25  
 " 211  
 25  
 " 211  
 25
- References:** Monroe, Walter S. "Test of attainment of first-year high school students in algebra," *School Review*, 23:159-71, March, 1915.  
 This contains an account of the derivation of the tests and their use with high school pupils.  
 Monroe, Walter S. "Measurement of certain algebraical abilities," *School and Society*, 1:393-5, March 13, 1915.  
*Second and third annual reports of the Bureau of Educational Measurements and Standards*, 1915-1917, p. 76 ff.  
 Results for twenty-five cities are given.

**Rugg and Clark's Standardized Tests in First-Year Algebra.** This series includes sixteen tests which are intended to measure the ability to do all of the types of exercises in the work of the first year.

**Publisher:** University of Chicago Press, Chicago, Illinois.

**References:** Rugg, H. G. "The experimental determination of standards in the first-year algebra," *School Review*, 24:37-66, January, 1916.

The author states, "A report of the mathematics section of the Illinois High School Conference of a preliminary investigation for the purpose of: (1) establishing certain methods by which standards for measuring the outcomes of a year's instruction in high-school algebra may be constructed; (2) stating tentative results obtained in eight Illinois high schools; (3) making certain criticisms of the learning and teaching process in algebra."

Rugg, H. O. and Clark, J. R. "The improvement in ability in the use of the formal operations of algebra by means of formal practice exercises," *School Review*, 25:546-54, October, 1917.

Suggestions and directions for the use of such material in a cooperative experiment in the teaching of first-year algebra, carried on with a number of progressive teachers seeking to improve the teaching of the subject.

Rugg, H. O. and Clark, J. R. "Standardized tests and the improvement of teaching in first-year algebra," *School Review*, 25:113-32, 196-213, February-March, 1917.

This final report made to the Illinois High School Conference includes an account of the derivation of their tests. A reproduction (including "verbal problems") and the standardization of the tests.

Rugg, H. O. and Clark, J. R. *Scientific method in the reconstruction of ninth-grade mathematics*. (Supplementary Educational Monographs, v. 2, no. 1, April, 1918), p. 52-86. Chicago: University of Chicago Press, 1918.

"In this monograph the authors discuss the design and the construction of standardized tests in secondary mathematics and what the standardized tests revealed."

**Stromquist's Preliminary Algebra Tests.** This series includes tests upon the following operations: (1) addition; (2) subtraction; (3) multiplication; (4) division; and (5) factoring.

**Publisher:** University of Wyoming, Laramie, Wyoming.

**Thorndike's Algebra Test.** This is a series of eight exercises arranged in order of increasing difficulty as determined by the opinion of competent judges.

**Reference:** Thorndike, E. L. "An experiment in grading problems in algebra," *Mathematics Teacher*, 6:123-34, March, 1914.



### D. Geometry

**Irwin's Tests in Mental Manipulations of Space Relations.** The author feels that this ability is not confined to mathematics alone, but it is constantly in demand in other lines as sewing, general science, drawing, English, etc. He has, therefore, worked out four tests (Tests A-D) which should "yield a rough measure of the ability of each pupil in a class to image space relations."

*Address:* H. N. Irwin, Fairmount Junior High School, Cleveland, Ohio.

*Reference:* Irwin, H. N. "Preliminary attempt to devise a test of the ability of high school pupils in the mental manipulations of space relations," *School Review*, 26:600-6, 654-70, 759-72, October-December, 1918.

The derivation of the tests is described and the tests are reproduced.

**Minnick's Geometry Tests.** This series of tests is based on the assumption that demonstration of a geometrical theorem involves the following abilities: (1) the ability to draw the figure; (2) the ability to state the hypothesis and conclusion; (3) the ability to recall facts concerning the figure; (4) the ability to select and organize facts so as to produce the proof.

*Publisher:* J. H. Minnick, University of Pennsylvania, Philadelphia, Pennsylvania. Also obtainable from Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*Reference:* Minnick, J. H. "A scale for measuring pupils' ability to demonstrate geometrical theorems," *School Review*, 27:101-9, February, 1919.

Study based on tests given in thirty high schools throughout the country and ranging in size from a few hundred pupils to several thousand. These pupils had completed either the first two books of plane geometry or all of plane geometry. Illustrated by graphs and tables.

Minnick, J. H. "Certain abilities fundamental to the study of geometry," *Journal of Educational Psychology*, 9:83-90, February, 1918.

The author discusses the four abilities which are fundamental to the study of geometry; how are these abilities related to teaching; to what extent are these four abilities developed; development of a series of tests which may be used for the purpose of diagnosis.

Minnick, J. H. *An investigation of certain abilities fundamental to the study of geometry.* Philadelphia: University of Pennsylvania, 1918.

In this monograph Dr. Minnick gives an analysis of geometrical ability and a complete account of the derivation of his tests.

### Starch's Geometry Test.

*Address:* Daniel Starch, University of Wisconsin, Madison, Wisconsin.

**Stockard and Bell Geometry Test.** A test of seventy questions which involve drawing figures, naming figures, indicating order of development in demonstration, completing statements, stating the converse, definitions, regular polygons, parts of a demonstration, etc.

Stockard, L. V. and Bell, J. Carleton. "A preliminary study of the measurement of abilities in geometry," *Journal of Educational Psychology*, 7:567-80, December, 1916.

Derivation, preliminary form reproduced. Analysis of results.

## IX. MENTAL TESTS

**Army Tests.** The mental tests which have been used extensively in the army were prepared by the Psychology Committee of the National Research Council. Three systems of tests are now in use:

1. *Alpha.* This is a group test designed for men who can read English. It requires only fifty minutes to give. The exercises are designed so they may be answered without writing, merely by underlining, crossing out, or checking. The papers may be scored by means of stencils, so that nothing is left to the personal judgment of those who do the scoring.

2. *Beta.* This is a group test for foreigners and illiterates. Success in Beta does not depend upon knowledge of the English language, as the instructions are given entirely by pantomime and demonstration.

3. *Individual Tests.* Three forms of individual tests are used: Yerkes-Bridges Point Scale, the Stanford-Binet Scale, and the Performance Scale.

*Address:* Division of Psychology, Medical Department, War Department, Washington, D. C.

*References:* *Army mental tests, methods, typical results, and practical application.* Washington, D. C., November, 1918.

This bulletin describes the three types of tests used in the army. It also gives an explanation of letter ratings and directions for the use of intelligence ratings.

Madsen, I. N. and Sylvester, R. H. "High school students' intelligence ratings according to the army alpha test," *School and Society*, 10:407-10, October 4, 1919.

Results of the Alpha test given to the high-school students of Rockford, Illinois, Madison, Wisconsin, and Sioux City, Iowa.

Madsen, I. N. "High school students' intelligence ratings according to the army alpha test," *School and Society*, 11:298-300, March 6, 1920.

Noble, E. L. "University students' intelligence ratings according to the army alpha test," *School and Society*, 11:233-37, February 21, 1920.

Webb, L. W. "Ability in mental tests in relation to reading ability," *School and Society*, 11:567-70, May 8, 1920.

Van Wagenen, M. J. "Our schools as measured by the army tests," *Educational Administration and Supervision*, 5:163-76, April, 1919.

Mr. Van Wagenen states: "The use of the Army Tests in certain elementary schools, high schools, and universities for the purpose of gathering information for the use of psychologists in the army has, at the same time, revealed very clearly certain facts about the schools, the students tested, and possible values of mental tests in educational practice." The author describes Army Test E and compares it with Alpha, form 6. Table II gives the weighted scores of elementary school pupils, high school freshmen, and college men and women.

Materials from the Army Tests under the title of "National Intelligence Tests" have been standardized by a committee of the National Research Council. They are to be published this spring, 1920, by the World Book Company, Yonkers, New York.

**Holley's Sentence Vocabulary Scale.** This scale has been devised with the Terman Stanford-Binet Vocabulary as a basis. The words of this well-

known vocabulary are put in sentences, the last word of which is found among four words to the right. The pupils indicate the correct responses by underlining the word which completes the sentence. This scale has been found to be a fair measure of intelligence. Series 3B is for grades VII to XII.

*Publisher:* Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*Reference:* *First annual report of Bureau of Educational Research, 1918-1919.*

**Otis' Group Intelligence Scale.** This scale is composed of ten tests which measure various phases of mental ability. Two forms of the scale are available. They may be used in grades VI to XII.

*Publisher:* World Book Company, Yonkers, New York.

*References:* Otis, A. S. "An absolute point scale for the group measurement of intelligence," *Journal of Educational Psychology*, 9:239-61, 333-48, May-June, 1918.

*Report of the Department of Research, being part of a report of the superintendent of schools of Oakland, California, 1917, p. 210.*

**Theisen and Fleming's Classification Test.** A group test based on the Army Test (Alpha), has been successfully used for high-school purposes. Takes fifty minutes to give and may be scored at the rate of 15 papers per hour.

*Publisher:* Bureau of Publications, Teachers College, Columbia University, New York City.

*Reference:* An article by Dr. Theisen entitled, "Group Intelligence Tests," will appear in an early number of the *Journal of Educational Research*.

**Thurstone's Psychological Examination for College Freshmen and High School Seniors.**

*Address:* L. L. Thurstone, Carnegie Institute of Technology, Pittsburgh, Pennsylvania.

#### X. MUSIC

**Baldwin's Public School Music Test.** A preliminary test of the efficiency of public school music. It is aimed to measure the accomplishment of pupils. In this respect it is similar to the Courtis Standard Research Tests in Arithmetic.

*Reference:* Baldwin, Ralph. "Efficiency in school music teaching and practical test of the same," *Music supervisors' national conference proceedings*, 1914, p. 43-50.

On page 46 the test is reproduced.

**Seashore's Musical Talent Chart.** This chart is based upon the analysis of musical ability and offers a graphic means of representing the pupil's musical ability. The pupil's musical abilities are measured by his

response to tones which are mechanically produced. The chart is simply a convenient device for recording the responses of the pupil. The records for testing a child are made by the Columbia Graphophone Company, Woolworth Building, New York. The *Manual for Measures of Musical Talent*, furnished free by the Educational Department of the Columbia Graphophone Company, contains directions, norms, and interpretations.

*References:* Seashore, C. E. "The measurement of musical talent," *Musical Quarterly*, 1:129-48, January, 1915.

A discussion of the elements which make up musical talent and the derivation of the Musical Talent Chart, the chart itself, and its meaning and use.

Seashore, C. E. "The rôle of a consulting supervisor in music," *Eighteenth Yearbook of the National Society for the Study of Education*, 1919, part II, p. 111-23.

Account of the use of the test in the elementary schools and with adults. Mr. Seashore states that the best time to use the chart is in the fifth grade.

Seashore, C. E. *The psychology of musical talent*. Boston: Silver Burdett and Company, 1919.

The system of evaluation of musical talents is reviewed and a chapter is devoted to each of the five double disk records.

Seashore, C. E. *Vocational guidance in music*. (University of Iowa Monographs, first series, no. 2, September, 1916.)

Copies may be obtained on request from the librarian of the University of Iowa, Iowa City, Iowa. A discussion of the value of the Musical Talent Chart.

"Testing for musical talent," *Musician*, 24:10, July, 1919.

A discussion of Seashore's tests.

## XI. PHYSICAL TRAINING

**Athletic Badge Tests for Boys.** These tests are not a complete measure of physical efficiency, but they serve as a fair index of heart, lung, and muscular development. They comprise a sixty-yard dash, standing broad jump, and a pull up. Standards have been worked out. These tests have been used in the high schools of Gary, New Orleans, Seattle, Buffalo, and New York.

*Publisher:* Playground and Recreation Association of America, 1 Madison Avenue, New York City.

*Reference:* Hanmer, L. F. *Gary public schools: physical training and play*. New York: General Education Board, 1919.

**Athletic Badge Tests for girls.** This test is similar to the one for boys, but being a newer series has no standard.

*Publisher:* Playground and Recreation Association of America, 1 Madison Avenue, New York City.

*Reference:* Hanmer, L. F. *Gary public schools: physical training and play*. New York: General Education Board, 1919.

Mr. Hanmer states: "The results (for the girls) are therefore no more satisfactory than the results of the boys' test. There is also the same unevenness and irregularity in development."

**Baldwin's Physical Development Scale.** Separate scales are given for boys and girls. Each scale gives norms for height, weight, and breathing capacity for each year from the kindergarten to the last year of the high school. This scale is included in Rapeer's Scale for Measuring Physical Education.

*Address:* Bird T. Baldwin, University of Iowa, Iowa City, Iowa.

*Reference:* Baldwin, B. T. "A measuring scale for physical growth and physiological age," *Fifteenth Yearbook of the National Society for the Study of Education*, 1916, part I, pp. 20-21.

**Rapeer's Scale for Measuring Physical Education.** This is a score card for judging five aspects of the results of physical education, i.e., health, physiological efficiency, physical development, physical ability and mental qualities.

*Address:* L. W. Rapeer, 1719 H. Street N. W., Washington, D. C.

## XII. READING

**Kansas Silent Reading Tests.** Test III of this series is designed for the high school. It consists of a series of exercises in which the pupil is asked to read a short paragraph and answer a single question on it. The administration of the test is very simple and it has been very widely used.

*Publisher:* Bureau of Educational Measurements and Standards, Kansas State Normal School, Emporia, Kansas.

*References:* Kelly, F. J. *The Kansas Silent Reading Test* (Studies by the Bureau of Educational Measurements and Standards, No. 3), Emporia, Kansas: Kansas State Normal School, 1915.

This contains the complete account of the derivation of the test.

Kelly, F. J. "The Kansas silent reading test," *Journal of Educational Psychology*, 7:63-80, February, 1916.

This is a partial account of the derivation of the test.

Monroe, Walter S. "A report on the use of the Kansas silent reading tests with over one hundred thousand children," *Journal of Educational Psychology*, 9:600-8, December, 1917.

The author concludes that the Kansas tests place more emphasis upon comprehension than upon rate of reading.

Smith, B. M. "Correlation of ability in reading with the general grades in high school," *School Review*, 27:493-511, September, 1919.

In trying to determine the correlation between abilities in reading and school abilities in the Oak Park, Illinois, high school Miss Smith used the Kansas Silent Reading and three other tests which she devised. Correlations are given for Kansas Silent Reading as well as the other tests.

*An educational survey of Janesville, Wisconsin.* Madison, Wisconsin: State Department of Public Instruction, 1918, p. 261.

An account of the use of the Kansas Silent Reading tests in high school.

**Monroe's Standardized Silent Reading Tests.** This series of silent reading tests is essentially a revision of the Kansas Silent Reading Tests described above.

100  
58  
6.7

100  
58  
6.9

Revised

L.A. 3-11  
J.E. -

**Publisher:** Bureau of Educational Research, University of Illinois, Urbana, Illinois.

**Reference:** Monroe, Walter S. "Monroe's standardized reading tests," *Journal of Educational Psychology*, 9:303-12, June, 1918.

This is an account of the derivation of the revision. The Kansas Silent Reading Tests have been criticized because many of the tests resembled arithmetical puzzles rather than ordinary reading material. In the revision the paragraphs have been selected from school readers.

**School report of the town of Southington, Connecticut**, 1919, p. 17.

An account of the use of these tests in the high school.

**Neher's High School Vocabulary Scale.** A test consisting of one hundred words chosen from the top of every third column of Laird and Lee's *Vest Pocket Dictionary*.

**Address:** H. L. Neher, Northwestern University, Evanston, Illinois.

**Reference:** Neher, H. L. "Measuring the vocabulary of high school pupils," *School and Society*, 8:355-59, September 21, 1918.

Reproduction of the test, scores obtained through experimentation and conclusions reached.

**St. Paul Survey Silent Reading Scale for High School.** This scale is similar to Minnesota Scale Beta, the derivation of which is based on Thorndike's Scale Alpha 2.

**References:** *Report of a survey of the school system, St. Paul, Minnesota*, 1917, p. 375-401.

The tests and questions are reproduced. Methods of scoring and a comparison of scores are also given.

**Haggerty, M. E. and Thomas, M. J.** "Preliminary study of the reading attainments of college freshmen," *School and Society*, 6:230-38, August 25, 1917.

The test was given to the college freshmen and was also given to two hundred and fifty members of the senior class in the St. Paul high school. The test which is reproduced in this article includes a number of the exercises from the St. Paul Survey Test.

**Smith's Silent Reading Paragraphs for High Schools.** Miss Smith has devised three informal silent reading tests. The tests are as follows:

**Test I. Paragraph Test.** Ability to grasp central idea. Four paragraphs were chosen from "A Father to His Freshman Son in College," (*Atlantic Monthly*).

**Test II. Information Test.** Ability to recall items of information. Selections were taken from the *Independent*.

**Test III. Narrative Test.** Ability to follow plot. Selection was a story from an inside page of *Chicago Daily Tribune*.

**Address:** Bertha M. Smith, Oak Park High School, Oak Park, Illinois.

**Reference:** Smith, B. M. "Correlation of ability in reading with general grades in high school," *School Review*, 27:493-511, September, 1919.

The tests were given to determine the correlation between abilities in reading and school abilities. The four reading tests used are described and the author's three tests are reproduced.

**Starch's English Vocabulary Test.** This test is designed to measure the percent of words of the entire English vocabulary as well as the absolute

number of words that a person understands. The test consists of several sets of one hundred words which were selected at uniform intervals from the entire English vocabulary—Webster's *New International Dictionary*.

*Address:* Daniel Starch, University of Wisconsin, Madison, Wisconsin.

*Reference:* Starch, Daniel. *Educational measurements*. New York: Macmillan, 1916, p. 38 ff.

The test is reproduced. Tentative scores are shown for different grades in the high school as well as for elementary school and college.

#### Thorndike's Scale Alpha 2 for Measuring the Understanding of Sentences.

This scale consists of a series of paragraphs and questions about the paragraphs arranged in order of difficulty of comprehension. This scale measures only the degree of comprehension and does this in terms of difficulty of the exercise which the pupil is able to do 80 percent correctly. Part II may be used in grades VI to XII.

*Publisher:* Bureau of Publications, Teachers' College, Columbia University, New York City.

*References:* Thorndike, E. L. "Improved scale for measuring ability in reading," *Teachers College Record*, 16:445-67, 17:40-67, November, 1915, January, 1916.

The test, key and score sheet are reproduced in the November issue along with the discussion of the use of the scale method of scoring, and the interpretation of scores. The derivation of the test is in the November number.

Kelley, T. L. "Thorndike's reading scale alpha 2 adapted to individual testing," *Teachers College Record*, 18:253-60, May, 1917.

Directions for using the scale with individual rather than with the class as the author intended.

### XIII. SCIENCE

#### A. General

#### Caldwell's Science Tests. The tests may be divided into three groups.

Group I consisting of two pairs of tests deals with observation and discrimination. Group II relates primarily to the pupil's ability to recognize natural phenomena, to recall experiences in science study and to make constructive statements regarding these experiences. Group III consists of two tests of ability to give reasons for, to interpret, or to explain changing phenomena—the changes occurring in the presence of pupils in the form of an experiment or demonstration. These tests were used in the senior classes of the Gary, Indiana high school.

*Reference:* Caldwell, O. W. *The Gary public schools: science teaching*. New York: General Education Board, 1919.

Chapter X is devoted especially to the reproduction of the tests which have been prepared by Mr. Caldwell.

#### Downing's Information Tests in Science. A vocabulary test of one hundred scientific terms covering the entire field of high-school science. The pupils are asked to put the letter "E" before a word he can explain, and the letter "F" before a word which he has heard about.

*Address:* Elliot R. Downing, University of Chicago, Chicago, Illinois.

**Reference:** Downing, E. R. "A range of information tests in science," *School Science and Mathematics*, 19:228-33, March, 1919.

The author reproduces the list of one hundred terms and states results with about fifteen hundred students in seventh and eighth grades, high school, and university.

**Grier's Range of Information Test in Biology.**

**Reference:** Grier, N. M. "Range of information test in biology," *Journal of Educational Psychology*, 9:210-16, 388-93, April-September, 1918.

The design of the tests is that described by Whipple in his Range of Information Test. The first number contains a description of a test in physiology and the second one in zoology.

**Herring's Tests in Scientific Thinking.** Series of three tests on each of eleven abilities involved in scientific thinking.

**Reference:** Herring, J. P. "Measurements of some abilities in scientific thinking," *Journal of Educational Psychology*, 9:535-58, December, 1919.

The tests are reproduced and results of their application to one pupil is given.

**Ruch's Range of Information Test in General Science.** This test consists of fifty scientific terms assembled upon the basis of frequency in general science texts. As three series of words are given, a different series may be given during the year.

**Address:** G. M. Ruch, School of Education, University of Oregon, Eugene, Oregon.

**Reference:** Ruch, G. M. "A range of information test in general science," *General Science Quarterly*, 4:257-62, November, 1919.

Describes the derivation of the test which is reproduced. The method for scoring is discussed.

**B. Chemistry**

**Bell's First-Year Chemistry Test.** A test of 25 questions which the author considered basic for elementary chemistry.

**References:** Bell, J. C. "Study of the attainments of high school pupils in first-year chemistry," *School Science and Mathematics*, 18:425-32, May, 1918.

Brief account of its derivation. Results from 401 pupils analyzed.

**Bell, J. Carleton.** "A test in first year chemistry," *Journal of Educational Psychology*, 9:199-209, April, 1918.

This is the complete report of which the above is a preliminary statement.

**Jones' Chemistry Tests.** (Union Science Series, See Physics.)

**Address:** F. T. Jones, 10109 Wilbur Avenue, Cleveland, Ohio.

**Rivett's Time Limit Test in Chemistry.** The article presents two types of simple tests which are arranged for beginners. They are intended as suggestive types of tests which teachers of chemistry may easily devise. The pupils may score these tests themselves.

**Address:** B. J. Rivett, Northwestern High School, Detroit, Michigan.

**Reference:** Rivett, B. J. "Testing results in chemistry," *School Science and Mathematics*, 19:742-45, November, 1919.

Two types of tests are reproduced. Advantages over the old form examination are stated in conclusion.



**Webb's Preliminary Test in Chemistry.** Test requires pupils to classify fifty well-known substances as elements, compounds, or mixtures.

**Address:** Hanor Webb, George Peabody College for Teachers, Nashville, Tennessee.

**Reference:** Webb, Hanor. "A preliminary test in chemistry," *Journal of Educational Psychology*, 10:36-43, January, 1919.

This is an account of the use of the author's test with a number of his classes.

100  
J 8  
v. 10

### C. Geography

**Boston Geography Test.** A forty-minute test on United States and the countries of Europe. Although the tests were given to elementary, high, and normal school pupils, particular interest centers in the results achieved by the eighth grade.

**Address:** Leonard O. Packard, Boston Normal School, Boston, Massachusetts.

**Reference:** *Geography. A report on a preliminary attempt to measure some educational results.* (Bulletin No. 5 of the Department of Educational Investigation and Measurement, Boston Public Schools, 1916.)

Discussion of the tests with reproduction, but method of giving and of rating is not shown. Results for high-school students are given.

### D. Physics

**Chapman's Physics Test in Electricity and Magnetism, Sound and Light.**

**Address:** J. Crosby Chapman, Western Reserve University, Cleveland, Ohio.

**Reference:** Chapman, J. C. "The measurement of physics information," *School Review*, 27:748-49, December, 1919.

The test with answers is reproduced. Results for 158 high-school pupils are tabulated.

revised

**Jones' Union Science Tests.** These tests form an elaborate series covering many of the topics of the subject. There is a separate test for each topic.

**Address and send results to:** Franklin T. Jones, 10109 Wilbur Avenue, Cleveland, Ohio.

**Reference:** Jones, F. T. "Practice exercises in physics," *School Review*, 26:341-48, May, 1918.

Describes the Union Science Tests—a series in physics. Test H<sub>1</sub>—Test H<sub>8</sub>, and Test H<sub>9</sub> are reproduced, with results analyzed.

revised

✓ **Randall, Chapman and Sutton's Test in Mechanics.** A simple test of a set of progressive problems in mechanics.

**Address authors:** Western Reserve University, Cleveland, Ohio.

**Reference:** Randall, D. P., Chapman, J. C. and Sutton, C. W. "The place of the numerical problem in high school physics," *School Review*, 26:39-43, January, 1918.

The test is reproduced. Results from experimental testing with four high schools are given.

**Starch's Physics Test.** This test is composed of 75 sentences which are arranged in the form of a completion test. The degree to which the

pupils have mastered the work in physics covered by these sentences is shown by their ability to fill in the missing words, phrases, and numbers. The test is broken up into topics and standard scores for each topic are printed on the test sheet. There are 28 sentences on mechanics, eight on heat, nine on light, and 21 on magnetism and electricity.

*Publisher:* Daniel Starch, University of Wisconsin, Madison, Wisconsin. Also obtainable from Bureau of Educational Research, University of Illinois, Urbana, Illinois.

*Reference:* Starch, Daniel. *Educational measurements*. New York: Macmillan, 1916, chapter XIV.

#### XIV. VOCATIONAL SUBJECTS AND MANUAL TRAINING

**Leavitt's Preliminary Test for Manual Arts.** As the title suggests this is only a preliminary test, not designed by the author for general use.

*Address:* F. M. Leavitt, Associate Superintendent in Charge of Vocational Education, Pittsburgh, Pennsylvania.

*Reference:* Leavitt, F. M. "Standardized measurements in the field of industrial arts," *Industrial Arts Magazine*, 8:132-8, April, 1919.

Brief discussion of methods of producing and using standardized tests is given. The preliminary scale for manual arts is reproduced.

**Wardner's Test for Knowledge of Tools.** This is a modification of one of the Army Trade Tests. Pupils are asked to identify 81 tools. Test is reproduced.

*Address:* C. A. Wardner, Director of Cooperative Trade Schools, Springfield, Vermont.

*Reference:* Wardner, C. A. "Applying the army trade tests to vocational schools," *Industrial Arts Magazine*, 8:402-03, October, 1919.

A reproduction and brief discussion of this test which is being used in the Cooperative Trade School, Springfield, Vermont.

50  
not

## SUMMER READING

1919

A hammock swinging 'neath a leafy birch,  
A glass of lemonade, a fan, then perch  
Old Omar's verses there where I can read  
And leave my teaching problems in the lurch.

1920

'Tis much the same,—the hammock and all that,—  
But now that Buckingham has come to bat,  
I read of educational research,  
And Omar's Rubaiyat falls to the mat.

The first six issues of the JOURNAL OF EDUCATIONAL RESEARCH are here offered at \$2.00 a set. They constitute up-to-date, trustworthy solutions of many questions that come to teachers in their daily classroom work. The Journal is devoted to the uses which have been made and are capable of being made of the results and methods of investigation. It emphasizes applications rather than abstractions, and practice rather than theory.

For summer professional reading, these first six numbers are unexcelled in either quality or quantity. A total of 520 pages of up-to-the-minute professional reading for \$2.00.

### A FEW OF THE LEADING ARTICLES

WILLIAM A. MCCALL. A New Kind of School Examination.

MURRAY A. DALMAN. Hurdles, A Series of Calibrated Objective Tests in *First Year Algebra*.

WILLIAM S. GRAY. Tests of Reading Accomplishment.

H. C. WALKER. Penmanship Practice.

CLIFFORD WOODY. Evaluating the Subject Matter of Spellers.

B. R. BUCKINGHAM. Index of Efficiency in Teaching *United States History*.

ARTHUR W. KALLOM. Analysis of and Testing in Common Fractions.

R. L. SANDWICK. Physical Health and Mental Efficiency.

W. M. PROCTOR. School Success of High School Pupils.

F. J. KELLY and A. K. LOOMIS. Retardation in One-Room Rural Schools in Kansas.

SAMUEL S. BROOKS. Getting Teachers to Feel the Need of Standardized Tests.

Other articles by Ayres, Charters, Strayer, Terman, Courtis, Henmon, Packer, Pressey, Lane, Hollister, etc., etc.

Orders Are Being Booked Now

\$2.00 for the Set of Six

**Public School Publishing Company**  
BLOOMINGTON, ILL.